TITLE OF THE INVENTION

APPARATUS AND METHOD FOR REINFORCING A PRESSURE VESSEL

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation of application Serial No. 09/938,327, filed August 22, 2001, now patent No. 6,719,165 ~~pending~~, which claims the benefit of priority of U.S. Provisional Application Serial No. 60/227,176 filed in the U.S. Patent & Trademark Office on Aug. 22, 2000, the disclosure of which is incorporated herein by reference.

sjc 6-13-07

GOVERNMENT LICENSE RIGHTS

[0002] The U.S. Government has a paid-up license in this invention and the right in limited circumstances to require the patent owner to license others on reasonable terms as provided for by the terms of contract no. FO4611-97-C-0053 awarded by the U.S. Air Force.

BACKGROUND OF THE INVENTION

[0003] Field of the Invention. The present invention relates to pressure vessels and, more specifically, to apparatus and methods for reinforcing pressure vessels. Examples of such pressure vessels include rocket motors, gas generators, and the like.

[0004] Description of the Related Art. It is desirable in the design and construction of certain pressure vessels, for example, high performance pressure vessels for rocketry or gas generator applications, to effectively reduce or minimize the inert mass of the vessel while maintaining or enhancing its strength and reliability. It also has been desirable to do so while containing or reducing the cost of such vessels.

[0005] Many pressure vessel designs include one or more doubly curved surfaces, for example, such as those associated with integrally formed end domes. These doubly curved surfaces may assume a number of different specific geometries or geometric cross sections. Pressure vessels used as motor casings for rocket motors, for example, typically include a cylindrical section, a domed fore section or domed fore and aft sections, and a doubly curved transition or mating section disposed between the cylindrical section and the domed section or